TARGETS Noise Screen Plug-In

JPDO EWG OSC
May 17, 2010
Atlanta, GA

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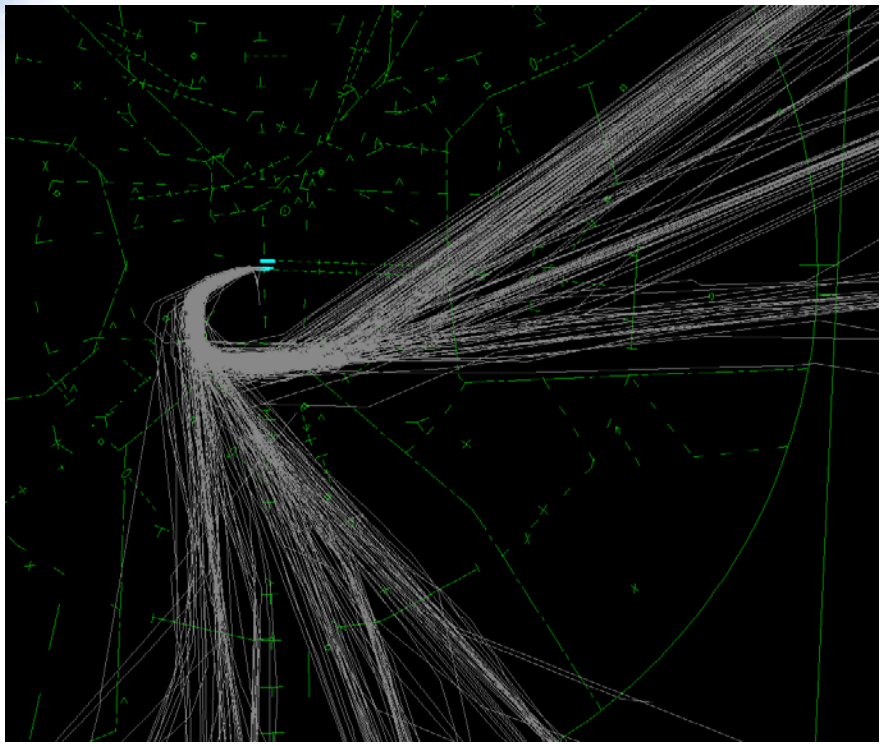
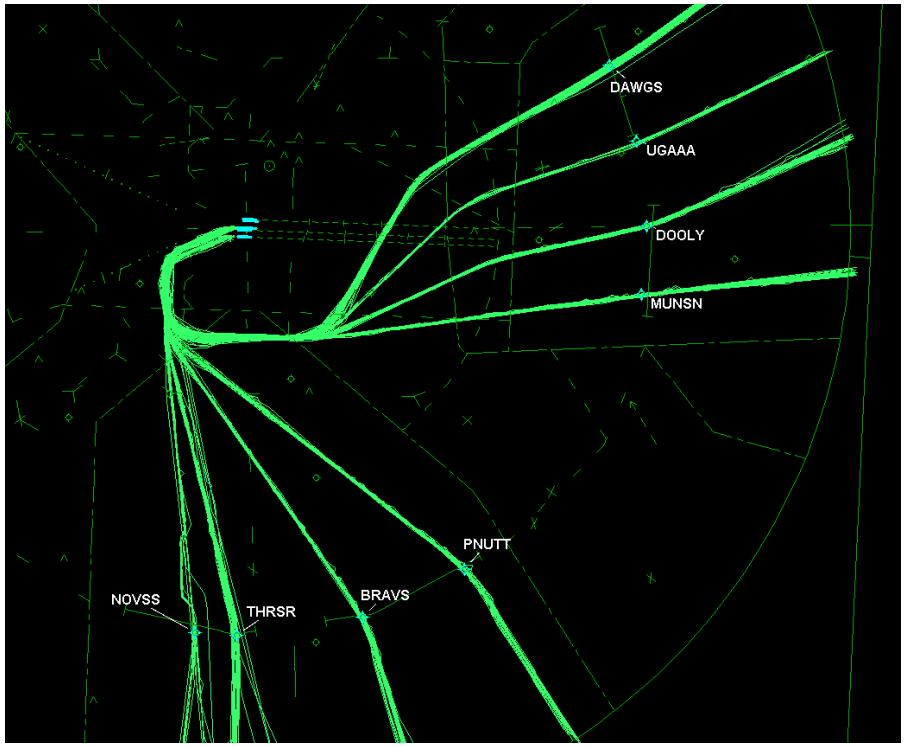
Impetus for Change: Reduced RNAV Traffic Dispersion





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Three Procedure Policy

- Specifically addresses RNAV overlays of existing conventional procedures
- Asserts that more than three procedure changes at an airport constitutes a change to airport operations
- Consider cumulative effects of the air traffic action
- Calls for use of noise analysis tool such as Integrated Noise Model (INM) instead of traditional screening models to support CatEx

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TARGETS Noise Plug-in Collaborative Effort

Environmental SMEs

RNAV/RNP Office

TARGETS Developers

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Air Traffic Facilities

RNAV Procedures Team

Environmental Programs Office

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Purpose

- **Streamline noise screening of procedures to satisfy requirements of the Three Procedure Rule**
- **Anciliary benefits**
  - **Provides a tool to improve the procedure design process by identifying potential noise impacts before finalizing a procedure or set of procedures**

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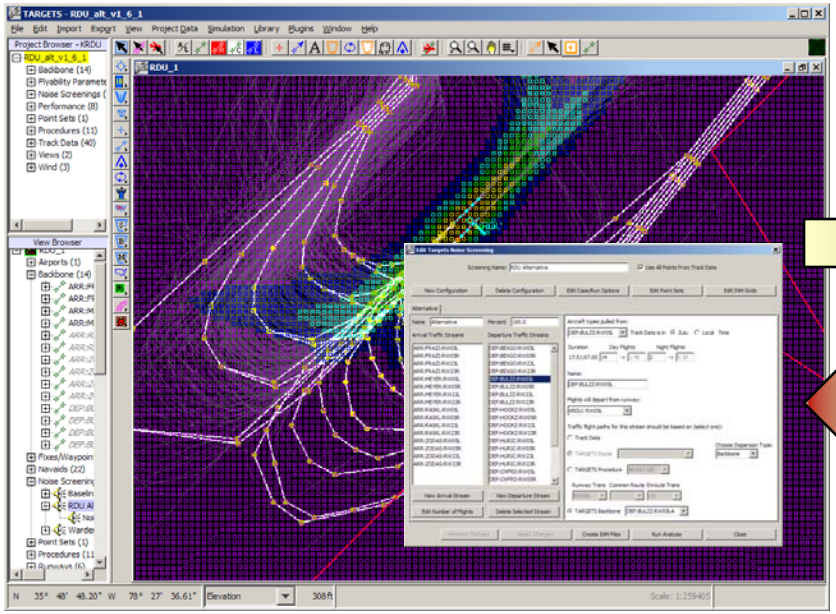
TARGETS Noise Plug-in

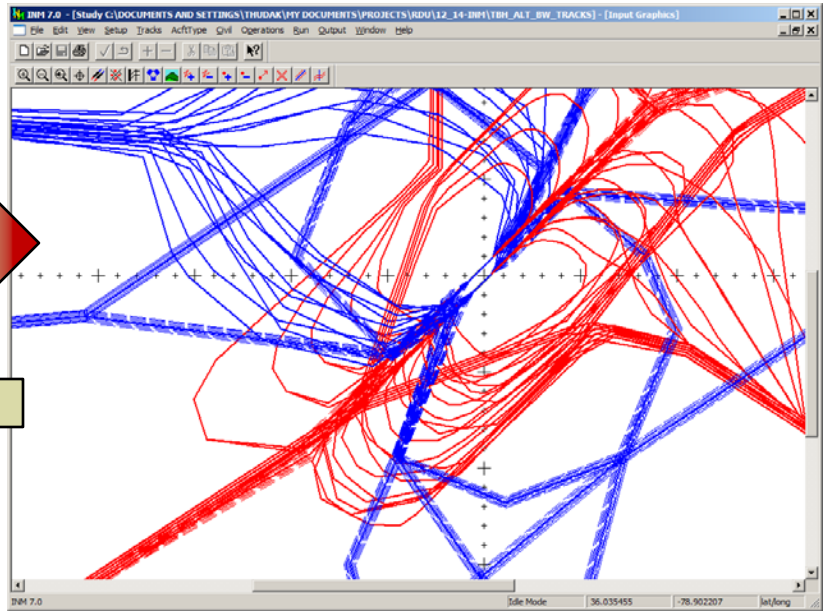
- **TARGETS Operator generates scenarios**
- **INM processes in the background**
- **TARGETS displays point data**



TARGETS

Input

Output



INM 7.0 (Background)

Beyond the Tool

- **Intended for use by the experienced TARGETS user. However, requires familiarity with:**
  - **NEPA and FAA Order 1050.1**
  - **Noise analysis concepts**
  - **Best practices for manipulating data**
  - **Interpreting the results**
- **Some level of automation improves accuracy of results**

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Methodology

- **Step 1: Create a “Baseline” scenario that models the Average Annual Day for the existing air traffic environment.**
- **Step 2: Create an “Alternative” scenario that represents an AAD for the proposed air traffic action.**
- **Step 3: Compare the difference between the Baseline and Alternative scenario absolute noise levels against a defined noise threshold criteria to determine if additional analysis/mitigation is needed.**

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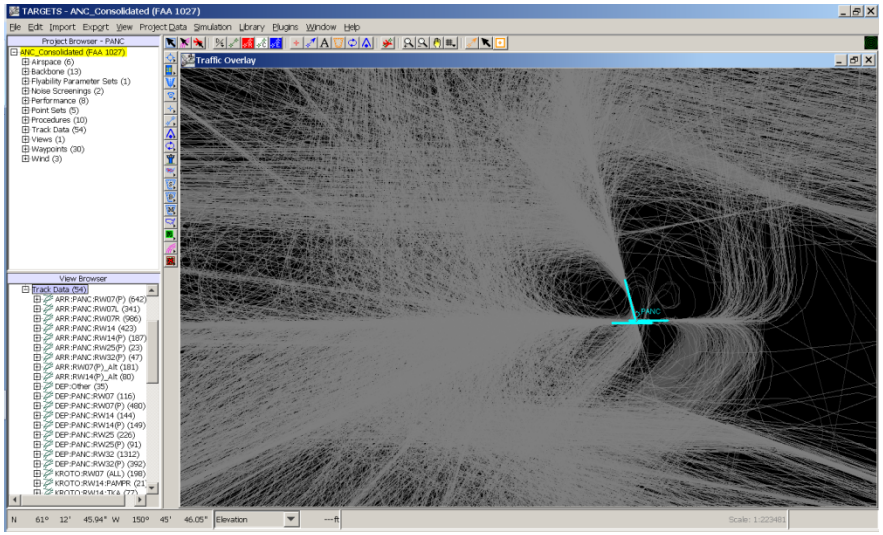
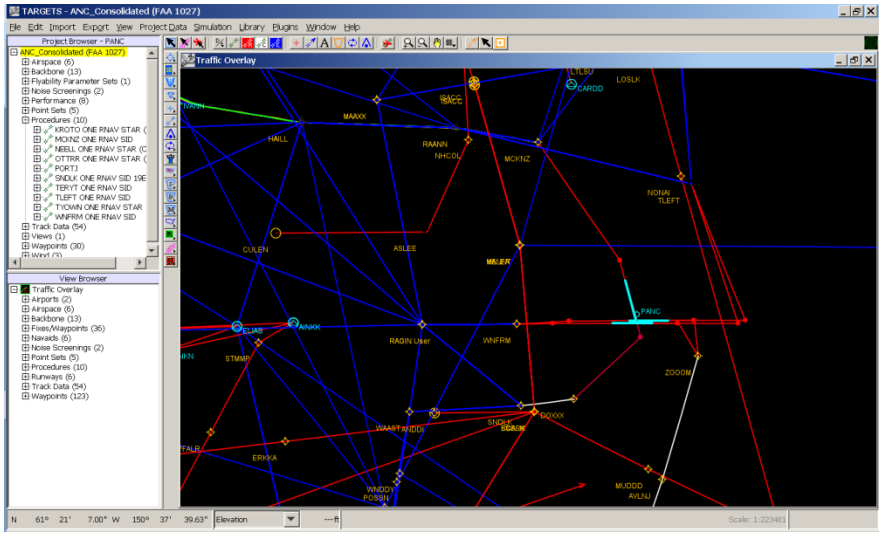
Basic Tools

NOP Radar Track Data



TARGETS Procedures



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- ETMS Traffic Counts
- Facility Runway Usage

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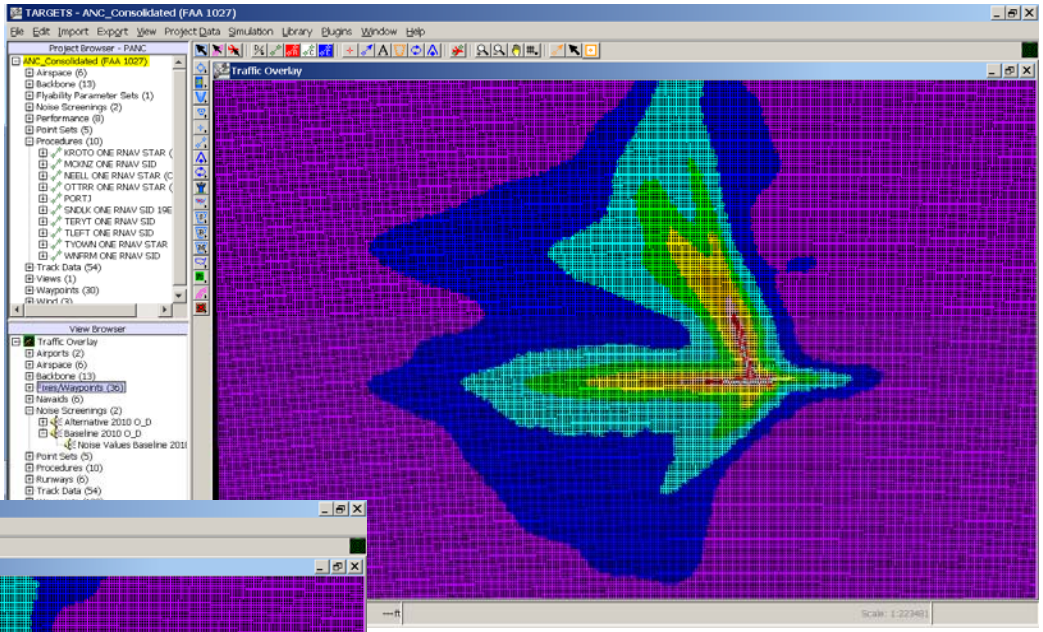
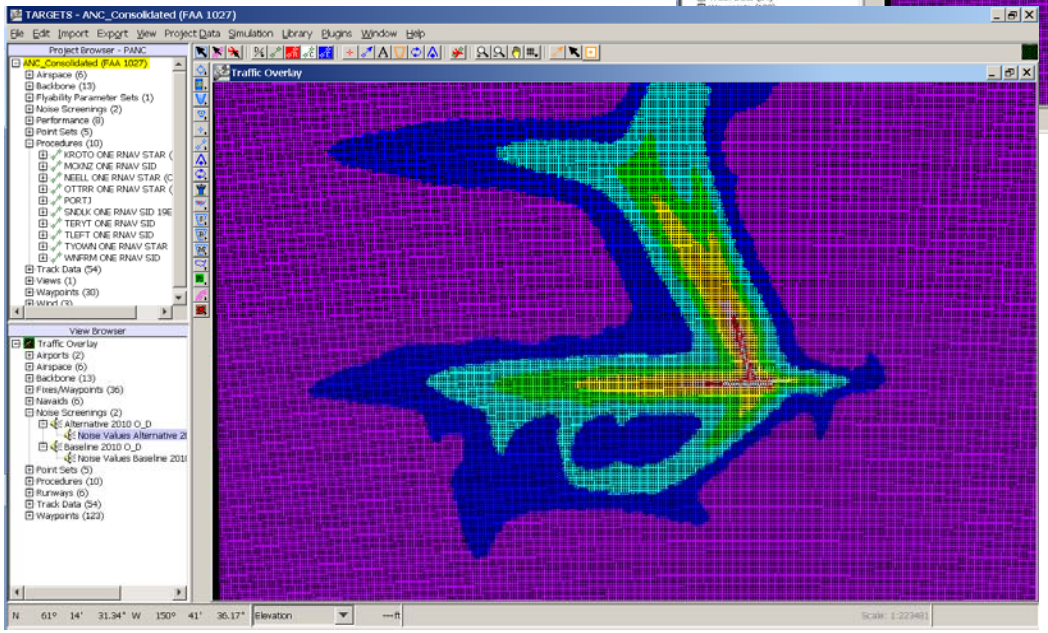
Generate Output

Baseline: Model of existing traffic scenario.





Alternative: Model of proposed air traffic action.

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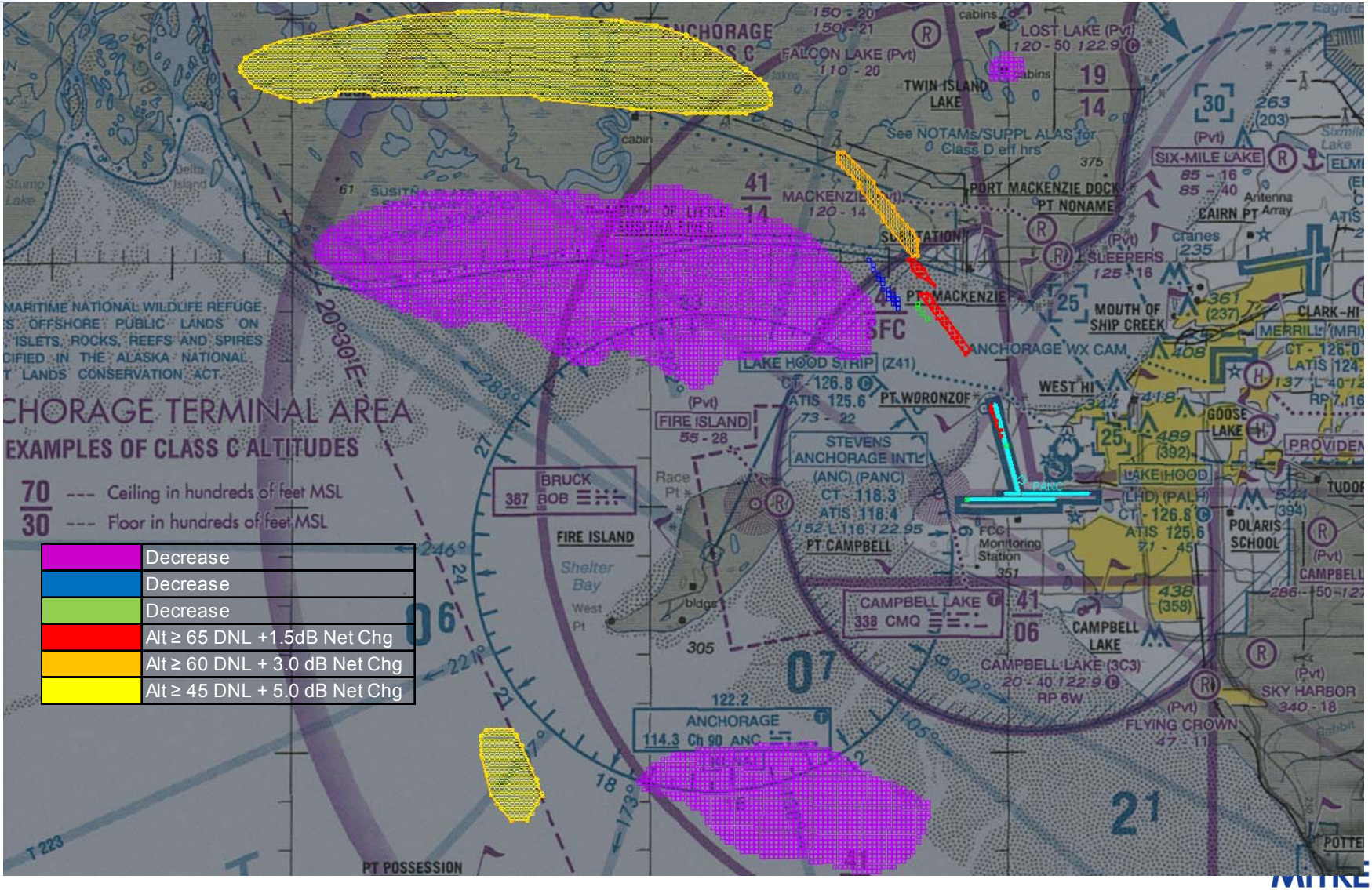
Overlay Results for Review by Environmental Specialist



Noise Screen Results (Noise Increases w/ Satellite Imagery)

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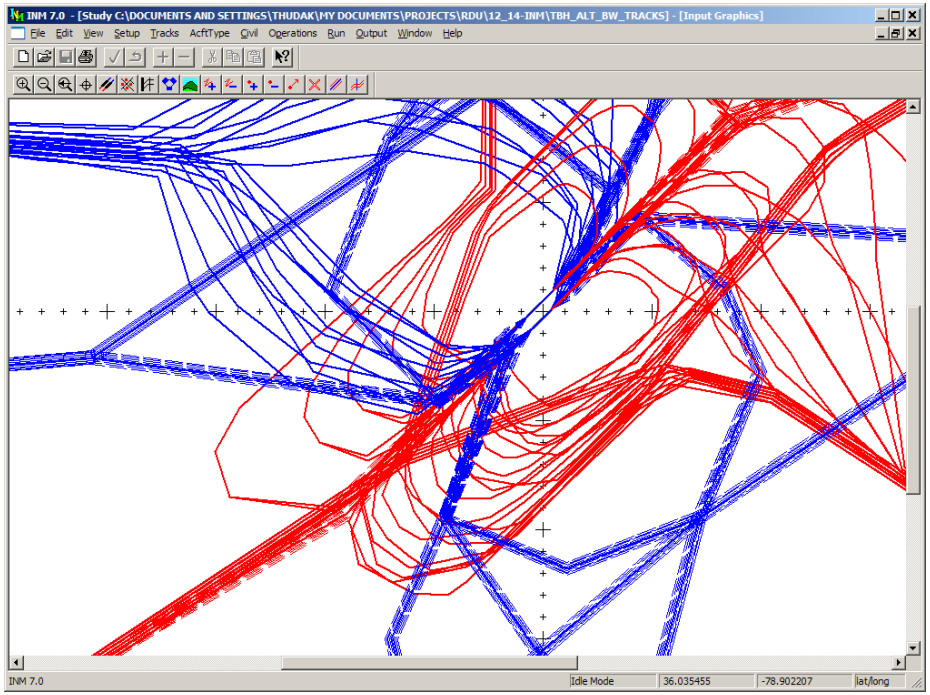
Detailed Analysis

- **INM input/output exists for detailed review by an Environmental Specialist, if necessary**
- **Provides further substantiation of the results**



- **Helpful to identify underlying contributors to noise that my not be obvious in the TARGETS output**

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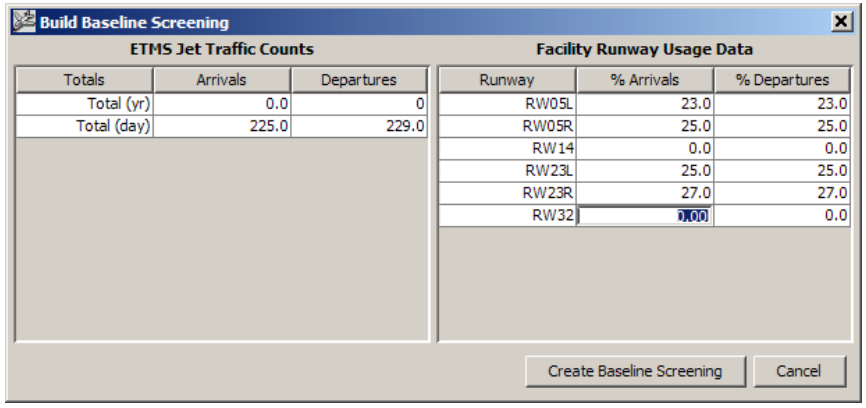
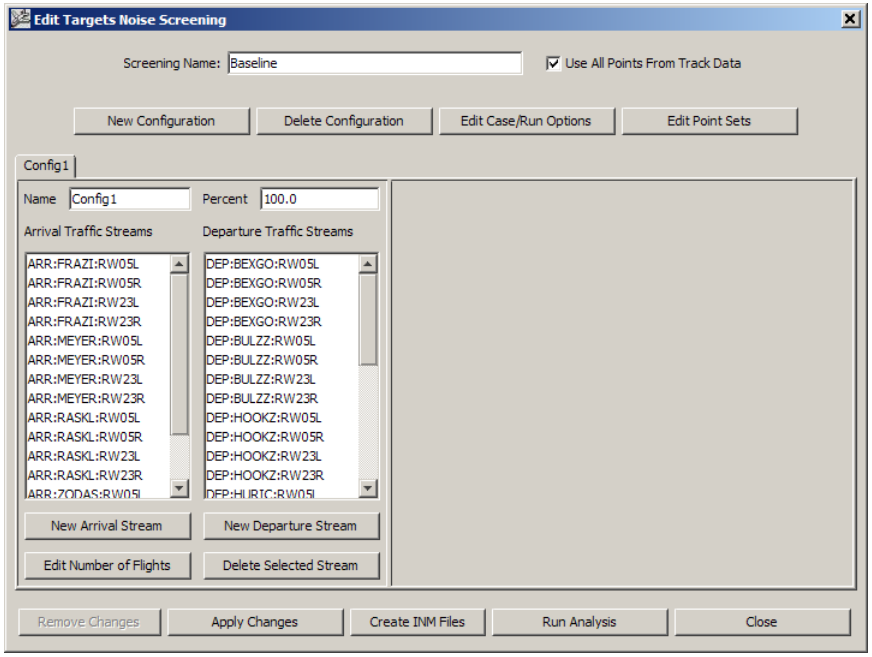
Average Annual Day Challenge

- **Automated Average Annual Day (AAD) construction tool**
  - **Using runway use data, ETMS flight counts, and day/night flight ratios from radar track data, TARGETS will build a complete baseline AAD.**
  - **Eliminates the need for complex spreadsheet**
  - **Reduces errors from human manual entry**
  - **Saves hours of manual preparation time**





Limitations

- No terrain analysis capability
- Standard 3.0 deg descent glidepath
- No procedure altitude constraints
- Irregular flight paths
  - Multiple go-arounds of the same aircraft track
  - Radar quality issues

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Status

- Three FAA contractors have been trained to use the tool
- Completed several analyses which resulted in Categorical Exclusions (case-by-case approval)
- TARGETS Noise Plug-in:
  - All major components implemented and stable
  - Continued improvements to improve:
    - Computation time
    - Volume of track data (near and mid term)
  - Developing supporting documentation and training materials
- Ultimately tech-transfer to FAA

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Questions/Comments

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